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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/854,403 | 05/11/2001 | Godefridus A.M. Hurkx | PHN 16,741A | 8359 |

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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| EXAMINER |
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MALDONADO, JULIO J

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| ART UNIT | PAPER NUMBER |
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2823

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

09/854,403

Applicant(s)

HURKX ET AL.

Examiner

Julio J. Maldonado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The cancellation of claims 10-20 is acknowledged.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/05/2003 has been entered.

Allowable Subject Matter

3. The indicated allowability of claims 6-9 is withdrawn in view of the newly discovered reference(s) to Williams et al. (U.S. 5,218,228). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Williams (U.S. 5,218,228).

In reference to claim 6, Williams et al. (Fig.6) in a related method to form a bipolar transistor including a first semiconductor region (124, 126) of a first conductivity

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type with a first connection conductor (144) forming a collector region of the bipolar transistor, a second semiconductor region (134, 136, 138) of a second conductivity type opposed to the first conductivity type with a second connection conductor (105, 145) forming a base region of the transistor, and a third semiconductor region (139) of the first conductivity type with a third connection conductor (146) forming an emitter region of the transistor; said method comprising forming the first semiconductor region (124, 126) of the first conductivity type; forming the second semiconductor region (134, 136, 138) on the first semiconductor region, the second semiconductor region having a partial region with a smaller flux of dopant atoms than other part of the second semiconductor region (134, 136, 138); forming the third semiconductor region (139) which lies recessed in the other part, and outside the partial region, of the second semiconductor region; and providing first (144), second (105, 145) and third (146) connection conductors to the first (124, 126), second (134, 136, 138) and third (139) regions with a connection conductor respectively, wherein the second conductor (105, 145) is exclusively connected to the second semiconductor region (134, 136, 138) and is adjacent to the partial region of the second semiconductor region (134, 136, 138) (column 4, line 58 – column 5, line 41).

In reference to claim 7, Williams et al. teach wherein the partial region of the second semiconductor region is formed below the second connection conductor and is given a smaller thickness and a lower doping concentration than those in the other region (Fig.6).

In reference to claim 8, Williams et al. teach wherein the partial region of the second semiconductor region is given a smaller thickness than that in the other region (Fig.6).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. ('228) in view of Blanchard (U.S. 4,345,265).

Williams et al. (Fig.6) in a related method to form a bipolar transistor including a first semiconductor region (124, 126) of a first conductivity type with a first connection conductor (144) forming a collector region of the bipolar transistor, a second semiconductor region (134, 136, 138) of a second conductivity type opposed to the first conductivity type with a second connection conductor (105, 145) forming a base region of the transistor, and a third semiconductor region (139) of the first conductivity type with a third connection conductor (146) forming an emitter region of the transistor; said method comprising forming the first semiconductor region (124, 126) of the first conductivity type; forming the second semiconductor region (134, 136, 138) on the first semiconductor region, the second semiconductor region having a partial region with a smaller flux of dopant atoms than other part of the second semiconductor region (134, 136, 138); forming the third semiconductor region (139) which lies recessed in the other

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part, and outside the partial region, of the second semiconductor region; and providing first (144), second (105, 145) and third (146) connection conductors to the first (124, 126), second (134, 136, 138) and third (139) regions with a connection conductor respectively, wherein the second conductor (105, 145) is exclusively connected to the second semiconductor region (134, 136, 138) and is adjacent to the partial region of the second semiconductor region (134, 136, 138) (column 4, line 58 – column 5, line 41).

Williams et al. also teach forming semiconductive regions by implanting impurities (column 2, lines 15 – 26) but fail to teach wherein said implanting is ion implantation. However, Blanchard (Fig.5) in a related method to form a MOS device teaches forming semiconductive regions of a conductivity type by means of ion implantation (column 6, lines 33 – 44). It would have been within the scope of one of ordinary skill in the art to combine the teachings of Williams et al. and Blanchard to enable the implantation step of Williams et al. to be performed according to the teachings of Blanchard because one of ordinary skill in the art at the time the invention was made would have been motivated to look to alternative suitable methods of performing the disclosed implantation step of Williams et al. and art recognized suitability for an intended purpose has been recognized to be motivation to combine. MPEP 2144.07.

Response to Arguments

8. Applicant's arguments with respect to claims 6-9 have been considered but are moot in view of the new ground(s) of rejection.

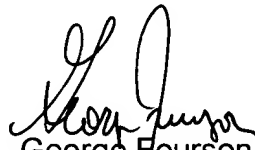
Conclusion

9. Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956 until 2/4/04. See MPEP 203.08.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner George Fourson whose telephone number is (571) 272-1860. The examiner can normally be reached on Monday through Friday.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (571) 272-1855. The fax number for this group is 703-872-9306 for before final submissions, 703-872-9306 for after final submissions and the customer service number for group 2800 is (703) 306-3329.

Updates can be found at <http://www.uspto.gov/web/info/2800.htm>.


George Fourson
Primary Examiner
Art Unit 2823

Julio J. Maldonado
January 20, 2004